

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:  
Adam T. Lee et al.

Serial No. 08/811,434

Filed: March 3, 1997

DOWNCOMER FOR CHEMICAL  
PROCESS TOWER



Attorney Docket No. KOCH.56145

Examiner: Scott Bushey

Art Unit: 1724

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**APPELLANT'S BRIEF (37 C.F.R. 1.192)**

This brief is in furtherance of the Notice of Appeal, filed in this case on March 11,  
1999.

The fees required under § 1.17 for filing this brief are dealt with in the accompanying  
Transmittal of Appeal Brief.

This brief is submitted in triplicate.

**I. Real Party in Interest**

The real party in interest in this appeal is Koch Enterprises, Inc.

**II. Related Appeals and Interferences**

None.

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### **III. Status of Claims**

The claims in the application are: 1-37.

Claims cancelled: 1-34.

Claims withdrawn from consideration but not cancelled: none.

Claims pending: 35-37.

Claims allowed: none.

Claims objected to: none.

Claims rejected: 35-37.

The claims on appeal are: 35-37.

### **IV. Status of Amendments**

An Amendment After Final and a terminal disclaimer were filed on January 26, 1999.

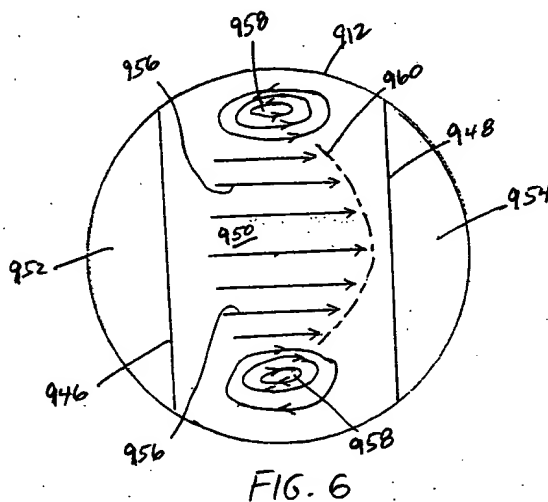
In an Advisory Action dated February 9, 1999, the Examiner indicated that the terminal disclaimer had been entered and was effective in overcoming the double patenting rejection. The rejections under 35 U.S.C. §§ 102(b) and (e) were maintained.

### **V. Summary of Invention**

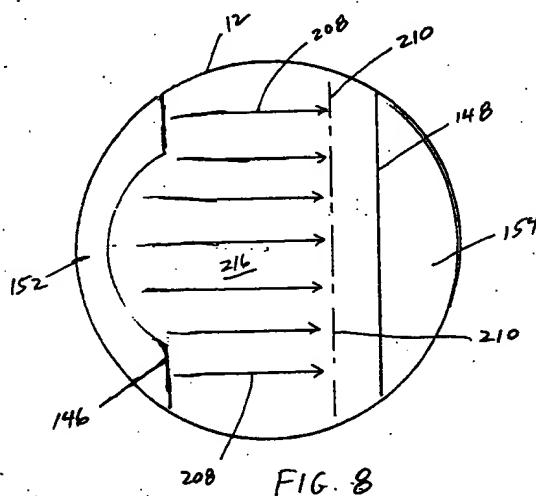
A mass transfer or distillation column is conventionally used to cause mass transfer between fluid streams flowing within the column. Typically, the fluid streams include at least one liquid stream flowing downwardly from an upper portion of the column and at least one vapor stream flowing upwardly from a lower portion of the column. Structures such as vapor-liquid contact trays are placed within the column to provide surfaces on which these liquid and vapor streams are able to intermix to cause mass transfer as components of the streams are passed from one to the other. The trays typically contain inlet and outlet ends and an "active area" in between the

ends where the vapor stream bubbles upwardly through small openings in the tray to intermix with the liquid stream flowing from the inlet end of the tray to the outlet end. At the outlet end of the tray, a downcomer is provided to convey the liquid downwardly to the inlet end of an underlying tray. The liquid then flows from the inlet end of the underlying tray, across the active area, and then enters another downcomer at the outlet end of the tray for downward passage to another underlying tray.

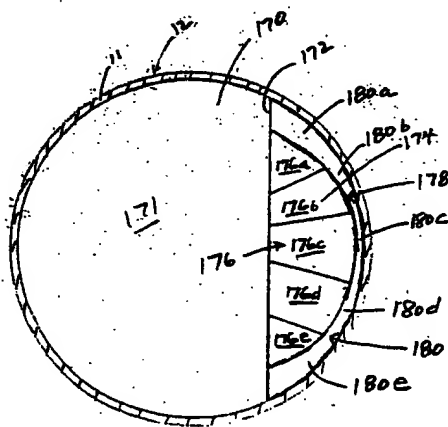
Because vapor-liquid contact trays are typically circular in configuration, liquid flowing along the tray perimeter must travel a greater distance to reach the outlet end than liquid flowing along the centerline of the tray. As a result, the liquid tends to flow in a non-uniform manner across the tray and zones of liquid stagnation or retrograde flow may develop (specification, page 19, line 13 through page 20, line 15). This retrograde flow is illustrated by arrows 958 in the prior art tray depicted in FIG. 6 reproduced below:



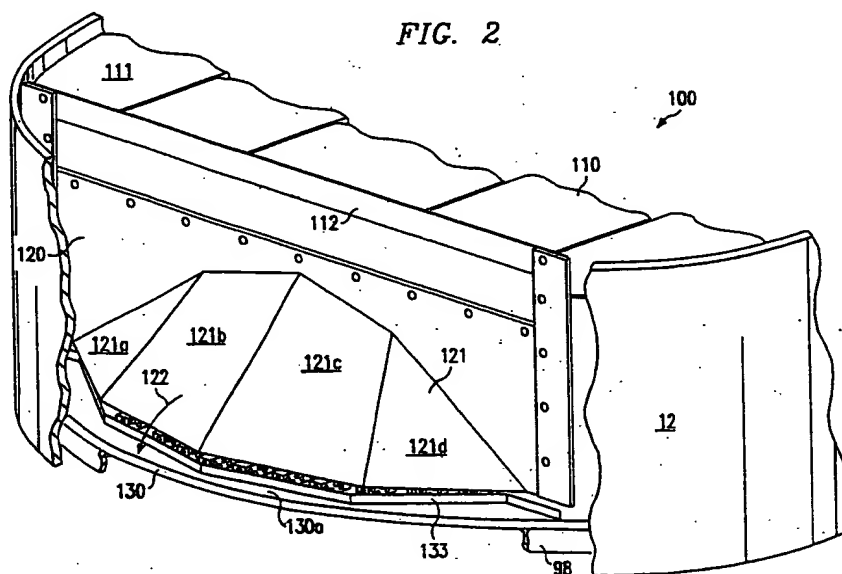
Applicant's invention is broadly directed to a downcomer constructed in a manner to facilitate uniform liquid flow across the tray (specification, page 21, line 4 to page 22, line 2), as illustrated by arrows 208 in FIG. 8 reproduced below:



In the embodiment illustrated in FIG. 7A below, the downcomer 174 has an outlet 180 with a center "pinch point" formed by locating the lower edge 178 of the downcomer wall region closer to the process tower wall 11 at the center 180c than at the opposing end portions 180a and 180e of the downcomer 174.



By constricting or pinching the center of the downcomer outlet 180 in this manner, more liquid is forced to flow through the opposing end portions 180a and 180e of the downcomer outlet 180, with a resulting increase in the uniformity of flow across the tray onto which the liquid is discharged. Another embodiment of this downcomer structure is illustrated in Fig. 2 reproduced below:



## VI. Issues

A. Whether claims 35-37 are unpatentable under 35 U.S.C. § 102(b) based on a public use or sale of the invention that occurred more than one year before the filing date of the instant application but less than one year prior to the filing date of copending application Serial No. 08/742,819 from which priority under 35 U.S.C. § 120 is claimed.

B. Whether claims 35-37 are unpatentable under 35 U.S.C. § 102(e) as being anticipated by copending application Serial No. 08/742,819 which has a common inventor with the instant application and from which priority under 35 U.S.C. § 120 is claimed.

### **VII. Grouping of Claims**

All of the claims stand or fall together.

### **VIII. Arguments**

The claim rejections arise solely because the Examiner has refused to accord the filing date of parent application Serial No. 08/742,819 to the instant continuation-in-part application. This refusal is based entirely on the fact that the inventive entities named in the application, although overlapping, are not identical.

Claims 35-37 stand rejected under § 102(b) based on an offer for sale that took place more than one year prior to the filing date of the instant application, but less than one year prior to the filing date of copending parent application Serial No. 08/742,819. Claims 35-37 also stand provisionally rejected under § 102(e) based on parent application Serial No. 08/742,819. Both of these rejections must fall when the instant application is accorded the benefit of the filing date of its parent application under 35 U.S.C. § 120.

There is no dispute that each of the requirements of 35 U.S.C. § 120 have been met by applicant. The present application was filed while the parent application was still pending<sup>1</sup>, the invention as set forth in claims 35-37 of the instant application is fully disclosed in the parent

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1. This application was filed on March 3, 1997, the parent application was filed October 20, 1996 and is presently awaiting issuance.

application<sup>2</sup>, the present application was filed by inventors named in the parent application<sup>3</sup>, and the present application was amended to contain a specific reference to the parent application<sup>4</sup>. As a result, § 120 dictates that this application shall have the same effect, as to the claimed invention, as though filed on the date of the prior application.

Notwithstanding the plain language of the statute, the Examiner has taken the position that the present application is not entitled to the filing date of the parent application because the inventive entities in the respective applications are not identical. The position taken by the Examiner is directly contrary to the controlling law of the Federal Circuit Court of Appeals. In *In re Chu*, 36 U.S.P.Q. 2d 1089 (Fed. Cir. 1995) (J. Rich), a dispute arose concerning the availability of an earlier patent to Doyle as prior art against a CIP application to Chu, Downs, Doyle and Smith (collectively "Chu"). The Board had earlier found that the Chu application was not entitled to the benefit of the Doyle patent filing date because the inventive entities, although overlapping, were not identical. The Federal Circuit, however, held that the 1984 amendment to § 120 allows continuation-in-part applications to be afforded the filing date of the parent application even though there is not complete identity of inventorship between the parent and subsequent applications. Judge Rich, writing for the panel, stated:

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2. In the Office Action dated December 11, 1998, paragraph 6 at page 5, the Examiner conceded that "[t]he subject matter claimed in the instant application is fully disclosed in the referenced copending application..."
  3. The instant application names four inventors, including all three of the inventors named in the parent application.
  4. Amendment filed December 1, 1998.

Thus, the Board erred in requiring complete identity of inventorship between the Doyle patent and the Chu application in order for Chu to have the benefit of the Doyle patent's filing date. There is overlap in the inventive entities of the Doyle patent and the Chu application, which, after the 1984 amendment, is all that is required in terms of inventorship or "inventive entity" to have the benefit of an earlier filing date. Id. at 1093 (emphasis added).

The Federal Circuit ultimately concluded that Doyle was available as a prior art reference, because it did not disclose and failed to provide support for the subject matter that was subsequently claimed by Chu.

As was the case in *Chu*, there is overlap in the inventorship of the present application and its parent application, thus satisfying the common inventorship requirement under § 120<sup>5</sup>. Unlike *Chu*, however, the Examiner has conceded that the claims in the present application are fully supported by the parent application. As a result, *Chu* requires that the presently claimed invention be afforded the benefit of the October 20, 1996 filing date of the parent application, thereby overcoming the rejection under 35 U.S.C. § 102(b)<sup>6</sup>.

The provisional rejection of claims 35-37 under 35 U.S.C. § 102(e) as being anticipated by parent application Serial No. 08/742,819 also fails once the claimed invention is accorded the benefit of the filing date of the parent application. A rejection under § 102(e) requires that the presently claimed invention be described in an application filed in the United States before

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5. It should be noted that there is no issue as to whether the correct inventors have been named. The invention of claims 35-37, though disclosed in the parent application, was not claimed in the parent application. As a result, there is no conflict with naming different, but overlapping, inventorship entities for the inventions claimed in the respective applications.
  6. It is undisputed that the offer for sale did not occur more than one year prior to the filing date of the parent application. See Applicant's response filed December 1, 1998.



the invention thereof by the present applicant for patent. Because the invention of claims 35-37 in the present application is entitled to an invention date at least as early as the filing date of the parent application, the parent application cannot constitute an application filed before the invention of claims 35-37.

For the foregoing reasons, the rejections of claims 35-37 are in error and reversal of the rejections is requested.

### **IX. Appendix of Appealed Claims**

The text of the claims involved in the appeal are:

35. An apparatus for facilitating enhanced interaction of vapor and liquid passing in counter-current flow through a process tower, said process tower having a wall and at least one tray supported therein, said at least one tray having a tray inlet area and a tray outlet area, said apparatus comprising:

a downcomer disposed above said at least one tray;

said downcomer being formed between a wall region and the wall of said process tower and having an outlet for the flow of liquid therefrom; and

said downcomer outlet disposed above said tray inlet area, said downcomer outlet being formed by a lower edge of the wall region and the wall of said process tower and having a center and opposing end portions with the lower edge of the wall region being closer to the wall of said process tower at the center than at the opposing end portions so that more liquid flows through the opposing end portions of the downcomer outlet than through the center of the downcomer outlet, thereby providing substantially uniform flow of liquid across said tray.

36. The apparatus as set forth in claim 35, wherein said wall region includes a semi-conical wall that tapers to said downcomer outlet.

37. The apparatus as set forth in claim 35, wherein said lower edge of the wall region comprises multiple straight lines connected end-to-end.

### **XI. Summary**

For the foregoing reasons, it is submitted that the rejections of claims 35-37 were erroneous, and reversal of the rejections is respectfully requested.

Respectfully submitted,



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March 23, 1999

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